

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 03/00257

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: C12N 1/21 // C12N 15/78, C12N 1/20, (C12N 1/21, C12R 1:39)  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ, BIOSIS, MEDLINE, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Gene, Volume 278, 2001, Antonella Morea et al, "Characterization of algG encoding C5-epimerase in the alginate biosynthetic gene cluster of Pseudomonas fluorescens", pages 107-114, abstract, page 107 - page 107, left column, section 3.5  --	1-26
X	Journal of General Microbiology, Volume 129, 1983, J Howard Pringle et al, "Selection of Attachment Mutants during the Continuous Culture of Pseudomonas fluorescens and Relationship between Attachment Ability and Surface Composition". pages 2557-2569, abstract, page 2564, table 3, page 2565, "EP analysis" and table 4  --	1-12,24-26

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

27 October 2003

Date of mailing of the international search report

28-10-2003

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

SARA NILSSON/BS

Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 03/00257

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Journal of General Microbiology, Volume 125, 1981, J.R.W. Govan et al, "Isolation of Alginate-Producing Mutants of Pseudomonas fluorescens, Pseudomonas putida and Pseudomonas mendocina", pages 217-220, page 217, paragraphs 3-5, pages 218, paragraph 3, pages 219, paragraph 3  --	1-12,24-26
X	Journal of Bacteriology, Volume 172, No. 6, 1990, Chaitanya E. Chitnis et al, "Cloning of Pseudomonas aeruginosa algG, Which Controls Alginate Structure", pages 2894-2900, abstract, page 2899, left column, paragraph 2  --	1-26
X	US 4490467 A (JARMAN ET AL), 25 December 1984 (25.12.84), abstract, column 1, lines 57-60, column 2, lines 35-54, column 6, tables 3-4  --	1-12,16-19, 24-26
P,X	Journal of Bacteriology, Volume 185, No. 12, 2003, Martin Gimmetstad et al, "The Pseudomonas fluorescens AlgG Protein, but Not Its Mannuronan C-5-Epimerase Activity, Is Needed for Alginate Polymer Formation", pages 3515-3523, page 3515, left column, paragraphs 1-2  --	1-26
A	BIOSIS, accession number PREV200000305692, Fakhr M. K. et al, "Mutagenesis of a plasmid that confers constitutive alginate production to Pseudomonas syringae", & Phytopathology, Vol. 90, Nr. 6 Supplement, June 2000. Pg. 23  --	1-26
A	BIOSIS, accession number PREV199497073630, Herrero Marta et al, "A T7 RNA polymerase-based system for the construction of Pseudomonas strains with phenotypes dependent on TOL-meta pathway effectors", & Gene (Amsterdam), Vol. 134, No. 1, 1993. Pg. 103-106  --	13-15,20-21

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 03/00257

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BIOSIS, accession number PREV200200188924, Douthit S.A. et al, "Identification of amino acid motifs important for epimerase activity of the Pseudomonas aeruginosa alginate modifying enzyme, AlgG" &amp; Abstracts of the General Meeting of the American Society for Microbiology, Vol. 101, 2001, Pg. 278, Last 8 lines</p> <p>--</p>	1-12,22-26
A	<p>Journal of Bacteriology, Volume 176, No. 8, 1994, Herbert P. Schweizer et al, "Cloning and Nucleotide Sequenc of the glpD Gene Encoding sn-Glycerol-3-Phosphate Dehydrogenase of Pseudomonas aeruginosa", pages 2184-2193, abstract</p> <p>--</p>	1-26
A	<p>BIOSIS, accession number PREV199598304642, Franklin M. J. et al, "IPTG-Controlled Expression of the Alginate Biosynthetic Gene Cluster in Pseudomonas aeruginosa and Requirement of AlgT in High-Level Alginate Production", &amp; Abstracts of the General Meeting of the American Society for Microbiology, Vol. 95, No. 0, 1995, Pg. 178</p> <p>--</p>	13-15,20-21
A	<p>Journal of Bacteriology, Volume 184, No. 11, 2002, Michael J. Franklin et al, "Mutant Analysis and Cellular Localization of the AlgI, AlgJ, and AlgF Proteins Required for O Acetylation of Alginate in Pseudomonas aeruginosa", pages 3000-3007</p> <p>--</p>	1-26
A	<p>WO 9409124 A1 (PRONOVA BIOPOLYMER A.S.), 28 April 1994 (28.04.94), abstract, page 27</p> <p>--</p> <p>-----</p>	1-26

# INTERNATIONAL SEARCH REPORT

Information on patent family members

06/09/03

International application No.

PCT/NO 03/00257

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
US	4490467	A	25/12/84	AU	9002282 A	12/05/83
				CA	1192513 A	27/08/85
				DE	3269001 D	00/00/00
				EP	0078643 A,B	11/05/83
				FI	823738 A	03/05/83
				GB	2111521 A,B	06/07/83
				JP	1738056 C	26/02/93
				JP	4026833 B	08/05/92
				JP	58107174 A	25/06/83
-----						
WO	9409124	A1	28/04/94	AT	233317 T	15/03/03
				AU	677796 B	08/05/97
				AU	5287393 A	09/05/94
				DE	69332714 D	00/00/00
				DK	665882 T	31/03/03
				EP	0665882 A,B	09/08/95
				FI	951680 A	07/04/95
				GB	9221163 D	00/00/00
				JP	8504572 T	21/05/96
				NO	951364 A	06/04/95
				US	5939289 A	17/08/99
-----						